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Attorney Docket No. 100728-4 K&W 305-WCG
CH8005US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants : Ulrich Reiners, et. al.
Serial No. : 09/763,679
Filed : May 15, 2001
For : PACKAGING MATERIAL WITH A
POLYOLEFIN FOAM LAYER
Art Unit : 1771
Examiner : Victor S. Chang

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

July 7, 2005

Sir:

CORRECTED APPEAL BRIEF UNDER 37 C.F.R. RULE 1.192

This Corrected Brief is being submitted to correct the listing of claims in APPENDIX A. As noted by the Examiner in the EXAMINER'S ANSWER, claims 19-21 were missing from Appellants' Brief, but were included in the Appendix annexed to the Examiner's Answer. Said claims are included in the Appendix A annexed hereto.

This is an appeal from the final rejection by an Examiner of Art Unit 1771.

1. REAL PARTY IN INTEREST

The instant application is owned by CONVENIENCE FOOD SYSTEMS B.V., record owner hereof.

2. RELATED APPEALS AND INTERFERENCES

The undersigned is not aware of any appeals, interferences, re-examinations, infringement actions, or the like, in any related applications.

3. STATUS OF THE CLAIMS

The claims pending in this application are claims 1-17 and 19-21 and all of said claims are under appeal.

4. STATUS OF AMENDMENTS

The last amendment made was that filed on October 27, 2003, and said amendment was entered. There are no unentered amendments.

5. SUMMARY OF THE INVENTION

Each of the appealed claims pertains to novel packaging material comprising a polypropylene foam base layer (A), together with further layers, one of which is a layer (B) adjacent to the base layer and comprises at least one of the polyolefins of the base layer. The total thickness of the layers A+B is 0.5 to 2 mm, and the thickness of layer B is from 1/6 to 1/2 the thickness of layer A.

The inventive multilayer films have an excellent thermoformability on so-called FFS-machines (form-fill and sealing machines) and thus can be formed into packages, preferably to trays, by deep drawing (page 6, lines 18-20).

An essential feature of Appellants' invention resides in the discovery that by maintaining the thickness of layer B at from 1/6 to 1/2 the thickness of layer A (page 2, lines 26-28), a substantial and unexpected improvement in mechanical properties can be achieved without any increase in the thickness of the multilayer films, which can even be achieved where the total thickness is reduced (page 6, lines 27-34; page 9, table 3 and lines 21-23).

Note in particular the surprising results demonstrated by a comparison of Example 1 to the Comparative example. The films of Example 1 and the Comparative example were exactly the same in terms of their sequence of layers and the composition of each layer. However in the film of Example 1 layer B had a thickness of 160 μm , which was 1/5 the thickness of layer A; whereas in the comparative example, layer B was only 1/29 the thickness of layer A. As shown, the film of Example 1, even though it was much thinner than the layer of the comparative example (1010 μm vs. 1250 μm) still had far better mechanical properties than the film of the comparative example.

6. ISSUES

The sole issue is whether claims 1-17 and 19-21 are unpatentable under 35 U.S.C. 103(a) as obvious over Laurent et al. (US 6,132,539).

7. GROUPING OF CLAIMS

The rejected claims stand or fall together.

8. ARGUMENT

Laurent is directed towards a method of preparing a coated polypropylene foam layer which avoids the need for a low-temperature plasticizing bonding layer. According to Laurent, a foam sheet is coated by extrusion lamination, wherein the foam sheet and a coating film are guided together and a further bonding layer is extruded between them (col. 2, lines 26 - 29).

The Examiner points to column 1, lines 12-15, where Laurent, in discussing the prior art, mentions foamed polypropylene layers coated on either or both sides with a coating film, and that "Depending on the composition and thickness of the coating film, this film may also serve as a further means for increasing thickness" (office action of 1/30/03, paper # 8, page 3). The Examiner also points to a five-layer coating film A shown in Fig. 3 of Laurent which consists of a coating film A, a foam layer B and a bonding layer 30 (Office action of 1/30/03, page 4).

The Examiner acknowledges that Laurent does not include an express teaching of the range of thickness ratio between foam layer (B) and binding layer

(30), but contends that "adjusting the thickness ratio between these layers are within the ordinary skill of the art, motivated to provide suitable properties, such as stiffness, to the thermoformed tray" (Office Action of 1/30/03, page 4).

The Examiner's contention is totally unsubstantiated by any teaching or suggestion found in the prior art. Nowhere can there be found any teaching or suggestion that the substantial improvement in mechanical properties demonstrated by Appellants' examples could be achieved by maintaining the total thickness of layers A + B in the range of 0.5 to 2.0 mm and the thickness of layer B in the range of 1/6 to 1/2 of the thickness of layer A.

There is no evidence whatsoever presented that would show that any person skilled in the art would be motivated to "adjust" the thickness ratio of Laurent's foam layer (B) and binding layer (30) to obtain a total thickness of these two layers that was between 0.5 and 2 mm, and a thickness ratio of layer(30) to layer (B) of 1/6 - 1/2.

There is, however, plenty of evidence that no person skilled in the art would even dream of doing this, and, in addition, that this simply could not be done without going contrary to Laurent's teaching.

In this regard, it should be noted that even when Laurent's bonding layer is at its maximum thickness (30 µm) and his foamed layer is at its minimum

thickness (0.5 mm) (see col. 3, lines 34-45) the ratio of the bonding layer thickness to the foamed layer thickness is far below Appellants' minimum of 1/6. More specifically, layer 30 has a thickness range of 5 to 30 μm . Since one $\mu\text{m} = 10^{-3}$ mm, Laurent's layer 30 has a thickness range of .005 - .030 mm.

At best, therefore, Laurent's ratio of layer (30) to his layer (B), would be only 0.030/0.5 which = 1/17. This is not even close to Appellants' ratio of from 1/6 - 1/2.

Thus, there is no way that anyone reading Laurent could even "accidentally" arrive at Appellants' novel film.

Moreover, the tremendous improvement in the E-modulus and elongation at break that was achieved with Appellants' film, as compared to a thicker film having the same sequence of layers of the same composition, will be seen as totally surprising and unexpected by those skilled in the art.

Moreover, the tremendous improvement in the E-modulus and elongation at break that was achieved with Appellants' film, as compared to a thicker film having the same sequence of layers of the same composition, will be seen as totally surprising and unexpected by those skilled in the art.

In the Advisory Action, the Examiner argues that;

"...it would have been obvious to one of ordinary skill in the art to optimize the stiffness of the multilayer by increasing the thickness of the bonding layer, motivated by the desire to minimize the material cost, since it is well known that barrier and sealing polymers are generally more costly than the polypropylene used for the bonding layer." (Advisory Action, page 3)

This is simply not a reasonable statement to make, as those skilled in the art do not use "bonding layers" to "increase thickness". Bonding layers are used to bond two other layers together, and generally it would be desirable to minimize their thickness. More to the point, however, is the fact that the Examiner has not produced any evidence whatsoever that those skilled in the art would "increase the thickness of the bonding layer...to optimize the stiffness".

Even if this were done, however, Appellants' invention would not be arrived at. Appellants do not simply "increase the thickness" of their films. Appellants have discovered that by maintaining the ratio of the thicknesses of layers B:A within a specific range, in combination with maintaining the total thickness of A+B within a specific range, they achieve a surprising improvement in mechanical properties, such as resistance to breaking and stiffness of the E-modulus (page 6, lines 27-30). THIS CONSIDERABLE IMPROVEMENT IS ACHIEVED WITHOUT ANY INCREASE IN THE THICKNESS OF THE MULTILAYER FILMS...(Page 6, lines 30-31). Note that in the Examples, the film

according to the invention had a total thickness of 1010 µm (Page 8, table 1) whereas the film of the comparative example had a total thickness of 1250 µm (Page 9, table 2). Yet the thinner inventive film had better physical properties than the thicker comparative film (Page 9, table 3).

There is accordingly no reasonable basis upon which Appellants' claims can be seen as obvious over the Laurent reference.

9 CONCLUSION

Wherefore, it is submitted that the final rejection is in error and should be reversed.

CONDITIONAL PETITION FOR EXTENSION OF TIME

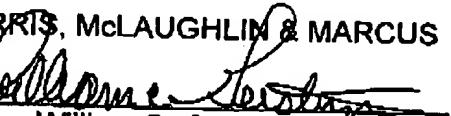
If any extension of time for this amendment is required, Appellants request that this be considered a petition therefore. Please charge the required petition fee to Deposit Account No. 14-1263.

ADDITIONAL FEE

Please charge any insufficiency of fee or credit any excess to Deposit
Account No. 14-1263.

Respectfully submitted,

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Suzsa Schuster
Date: July 7, 2005

10. APPENDIX A

The claims on appeal read as follows:

Claim 1. A multilayer film comprising the following sequence of layers:

- A) a base layer of foamed propylene homopolymers, copolymer or mixtures thereof,
 - B) a layer comprising at least one of the polyolefins of the foam layer A,
 - C) optionally a tie layer based on a polyolefin
 - D) optionally an adhesive layer
 - E) optionally a gas barrier layer, a flavortight barrier layer, or both,
 - F) an adhesive layer,
 - G) an optionally sealable or peelable surface layer,
- whereby the total thickness of layers A and B ranges from 0.5 to 2 mm and the thickness of layer B ranges from 1/6 to 1/2 of the thickness of layer A.

Claim 2. A multilayer film according to claim 1, wherein the total thickness of layers A and B ranges from 0.6 to 1.4 mm.

Claim 3. A multilayer film according to claim 1 wherein the thickness of layer B ranges from 1/6 to 1/3 of the thickness of layer A.

Claim 4. A multilayer film according to Claim 1, wherein layer A is made of a foamed mixture of polypropylene with long chain branching and a propylene-ethylene-blockcopolymer.

Claim 5. A multilayer film according to Claim 1, wherein layer B is made of polypropylene or a propylene-ethylene-copolymer.

Claim 6. A multilayer film according to Claim 1, wherein layer C is made of a polyolefin based on a monomer which is present in a predominant amount in the polyolefins of foam layer A.

Claim 7. A multilayer film according to claim 6, wherein the polyolefin is polypropylene.

Claim 8. A multilayer film according to Claim 1, wherein layer E is present and is made of ethylene-vinylalcohol copolymer.

Claim 9. A multilayer film according to Claim 1, wherein layer G is made of a sealable polymer and optionally contains additives.

Claim 10. A multilayer film according to Claim 9, wherein layer G is made of a low density polyethylene or an ionomer.

Claim 11. A multilayer film according to Claim 1, wherein layer G is

made of a peelable polymer and optionally contains additives.

Claim 12. A multilayer film according to Claim 11, wherein layer G is made of a mixture of low density polyethylene and a polybutylene.

Claim 13. A multilayer film according to Claim 1, wherein the total thickness of layers C to G ranges from 20 to 70 μm .

Claim 14. A multilayer film according to Claim 13, wherein the total thickness is 30 to 50 μm .

Claim 15. A packaging material comprising the multilayer film of Claim 1.

Claim 16. A packaging item made of a film according to Claim 1.

Claim 17. A packaging item according to Claim 16, wherein said packaging item is a packaging tray.

Claim 19. A method for packaging meat, sausage or cheese which comprises packaging said meat, sausage or cheese in a multilayer film according to Claim 1.

Claim 20. A method of packaging material on form-, fill- and sealing packaging machines which comprises packaging said material in a film of Claim 1.

Claim 21. A food packaging container which comprises the multilayer film of Claim 1.